

CLAIMS

What is claimed is:

5           1.       A method of assigning a transmission data rate in a communication system comprising a transmitter, a receiver, and a plurality of high and low processing gain communication channels, the method comprising selecting a data rate for data transmission over a low processing gain channel such that the power required to transmit at the selected data rate, when added to transmitter output power required for transmission on high processing gain channels, does not exceed the maximum transmitter power capability.

10                   2.       A method of assigning a transmission data rate in a communication system comprising a transmitter, a receiver, and a plurality of communication channels, the method comprising the steps of:

                          measuring a transmitter output power due to transmission;

15                           determining a relative transmitter output power required for transmission over a channel based upon a first data transmission rate for the channel;

                          determining a projected output power required for transmission over all channels to be transmitted based upon the relative transmitter output power required for transmission over the channel at the first data transmission rate;

20                           comparing the projected output power to a maximum transmitter output power;

                          and

                          selecting a second data transmission rate for the channel based upon the comparison between the projected output power and the maximum transmitter output power.

25           3.       The method of claim 2 wherein the step of measuring transmitter output power comprises estimating current transmitter output power by averaging output power over a stated time period.

4. The method of claim 2 wherein the step of measuring transmitter output power comprises measuring transmitter output power due to transmission over at least one high processing gain channel.

5. The method of claim 2 wherein the step of measuring transmitter output power comprises measuring transmitter output power due to transmission over at least one high processing gain channel and at least one low processing gain channel.

6. The method of claim 2 wherein the step of determining the relative transmitter output power required comprises:

storing the relative transmission power required for each channel at particular data transmission rates in a memory;

accessing the relative transmitter power required for each channel at a particular data rate from the memory; and

converting the relative transmission power to an absolute transmission power based upon the measured transmitter output power.

7. The method of claim 6 wherein the step of storing relative transmission power comprises storing a decibel power for each channel with reference to one of the channels.

8. The method of claim 4 wherein the step of determining the projected output power required comprises adding the relative power required for each low processing gain channel to the measured output power.

9. The method of claim 5 wherein the step of determining the projected output power required comprises adding the relative power required for each low processing gain channel to the output power required for transmission over active high processing gain channels.

10. The method of claim 2 wherein the step of comparing the projected output power to a maximum transmitter output power comprises determining whether the projected output power is within a tolerance range of the maximum transmitter output power.

5 11. The method of claim 2 further comprising the step of periodically repeating the measuring, the two determining, and the comparing steps.

10 12. The method of claim 2 wherein the step of selecting a second data transmission rate comprises at least one step selected from the group consisting of: repeatedly decreasing the data transmission rate until the projected output power is within a maximum transmitter output power tolerance, and repeatedly increasing the data transmission rate until the projected output power is within a maximum transmitter output power tolerance.

15 13. The method of claim 2 further comprising the step of proposing the selected second data transmission rate to the receiver.

14. The method of claim 13 further comprising the step of limiting the number of times that an increased data rate is proposed to the receiver within a stated time period.

20 15. The method of claim 2 further comprising the step of storing the selected second data transmission rate as a default data rate.

25 16. An apparatus for assigning a data transmission rate in a communication system comprising a transmitter, a receiver, and a plurality of high and low processing gain communication channels, the apparatus comprising:

means for measuring transmitter output power due to transmission;

means for determining the relative transmitter output power required for transmission over a channel based upon a first data transmission rate for the channel;

means for determining the projected output power required for transmission over all channels to be transmitted based upon the relative power required for the channel at the first data transmission rate;

means for comparing the projected output power to the maximum transmitter output power; and

means for selecting a second data transmission rate for the channel based upon the comparison between the projected output power and the maximum transmitter output power.

17. The apparatus of claim 16 wherein the means for measuring transmitter output power comprises means for estimating current transmitter output power by averaging output power over a stated time period.

18. The apparatus of claim 16 wherein the means for determining the relative transmitter output power required comprises:

means for storing the relative transmission power required for each channel at particular data transmission rates in a memory;

means for selecting a data rate for each low processing gain channel for data transmission;

means for accessing the relative transmitter power required for the low processing gain channel at the selected data rate from the memory; and

means for converting the relative transmission power to an absolute transmission power based upon the measured transmitter output power.

19. The apparatus of claim 16 further comprising means for proposing the selected data rate to the receiver.

20. The apparatus of claim 19 further comprising means for storing the proposed data rate as a default data rate.

21. A method of negotiating a data rate for a low processing gain communication channel in a communication system comprising a transmitter, a receiver, and a plurality of communication channels, the method comprising limiting transmitter output power for high processing gain channels when they are active, such that there is sufficient output power available to transmit at a selected data transmission rate on a low processing gain channel when it becomes active, and negotiating a different data transmission rate with the receiver based upon the received frame error rate at the receiver.

22. An apparatus for assigning a transmission data rate in a communication system comprising a transmitter, a receiver, and a plurality of communication channels, the apparatus comprising:

means for limiting transmitter output power for high processing gain channels when they are active, such that there is sufficient output power available to transmit at a selected data transmission rate on a low processing gain channel when it becomes active; and

means within the receiver for negotiating a different data transmission rate based upon the received frame error rate at the receiver.